ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

IN THE MATTER OF

RULEMAKING TO AMEND PARTS, 1, 2, 21, AND 25 OF THE COMMISSION'S RULES TO REDESIGNATE THE 27.5-29.5 GHz FREQUENCY BAND, TO REALLOCATE THE 29.5-30.0 GHz FREQUENCY BAND, TO ESTABLISH RULES AND POLICIES FOR LOCAL MULTIPOINT DISTRIBUTION SERVICE AND FOR FIXED SATELLITE SERVICES

CC DOCKET NO. 92-297

OPPOSITION TO JOINT PETITION FOR LIMITED RECONSIDERATION

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SUMMARY

Microwave Services, Inc. ("MSI") and Digital Services Corp. ("DSC") (collectively, "Associated") ask the Commission to reconsider the portion of its *28 GHz Band Plan* that designates the 18.8-19.3 GHz band for the non-geostationary fixed satellite service ("NGSO FSS"), noting that the Commission has never had an adequate opportunity to consider the sharing and policy issues associated with the Digital Electronic Message Service ("DEMS"). Teledesic Corporation, an applicant for an NGSO FSS system with downlink frequencies between 18.8 and 19.3 GHz, hereby opposes the "Joint Petition for Limited Reconsideration" for three basic reasons.

- **First, the Joint Petition is based on a fundamental misunderstanding of the Commission's *28 GHz Band Plan*.** NGSO FSS was permitted in the Ka-band before, during, and after the 28 GHz Rulemaking. The effect of the *28 GHz Band Plan* was not to *add* an allocation for *non-geostationary* FSS the designated sub-band, but rather to *remove* an allocation for *geostationary* FSS. The frequency conflict between NGSO FSS and DEMS thus has nothing to do with the *28 GHz Band Plan*, and provides no reason for reconsideration.

- **Second, the sharing issue on which Associated suggests reconsideration is one that Associated deliberately prevented the Commission from considering for the last three years.** While the Commission and several dozen private parties were struggling to accommodate all the proposed uses of the frequencies in the Ka-band, Associated chose instead to skip the Rulemaking and quietly collect licenses for the defunct DEMS service. *This "stealth" strategy was so successful that on at least one occasion the Microwave Branch of the Wireless Bureau licensed two DEMS applicants for the same frequencies in the same geographic area, and neither the licensees nor the Bureau even noticed.* Thus, Teledesic and the other parties who participated in this proceeding saw their business plans delayed pending adoption of a band plan. Because of its silence, Associated was able to accumulate DEMS licenses through random licensing activity, without the inconvenience of any policy review by the Commission. Every one of these licenses was issued during the 2 1/2 years *after* Teledesic filed its application, while the Commission was conducting the 28 GHz Rulemaking. The Commission must not further reward Associated's absence from the 28 GHz Rulemaking by *further* delaying the business plans of other Ka-band users so that Associated can finally offer policy proposals.

- **Third, the Commission has already announced its intention to conduct a comprehensive rulemaking about the future of DEMS in the 18 GHz band, including the sharing issue identified by Associated.** The public interest would be best

served by addressing Associated's Joint Petition in the upcoming 18 GHz Rulemaking. *In an 18 GHz Rulemaking, the Commission should also consider (a) whether a DEMS allocation is still necessary in light of its history of commercial failure and in light of more recent allocations for other similar point-to-multipoint services; and (b) if so, what frequencies would be most suitable for the "new DEMS" contemplated by Associated,* given that the Commission has already negotiated, proposed, and adopted the *28 GHz Band Plan* and has persuaded the rest of the world to support it. Thus, while the Joint Petition to reopen the 28 GHz Proceeding should be quickly denied, the sharing issues identified by Associated, together with related policy issues, should be considered by the Commission in an 18 GHz Rulemaking as soon as practicable.

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Washington, D.C.

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OPPOSITION TO JOINT PETITION FOR LIMITED RECONSIDERATION

INTRODUCTION

On September 27, 1996, Microwave Services, Inc. ("MSI") and Digital Services Corp. ("DSC") (collectively, "Associated" [1]) filed a Joint Petition asking the Commission to reconsider the portion of its *28 GHz Band Plan*[2] that designates the 18.8-19.3 GHz band for the non-geostationary fixed satellite service ("NGSO FSS"). Associated supports its request by noting

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1 MSI and DSC together hold almost all current DEMS licenses. They are joint venturers in, and affiliates of, Associated Communications, L.L.C. MSI, which owns a controlling interest in Associated Communications, L.L.C., is a subsidiary of The Associated Group. Furthermore, Associated Communications, L.L.C. is the successor in interest to DMT, L.L.C., which is an applicant for additional DEMS licenses in its own name. Under the terms of the joint venture, MSI and DSC will not operate their licensed DEMS systems "independently" but instead will turn management over to Associated Communications, L.L.C. — who "will have the option to require the contribution of the DEMS licenses owned by [DSC and MSI] to [the joint venture]." THE ASSOCIATED GROUP, 1996 ANNUAL REPORT 2 (1996) In addition, another Associated entity, Associated MDS Corp., has received numerous DEMS licenses since 1989, many of which it subsequently allowed to lapse, even after certifying that construction of the licensed stations was complete.

2 Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, and to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services (First Report and Order and Fourth Notice of Proposed Rulemaking), FCC 96-311 (released July 22, 1996) (the *"28 GHz Band Plan"*).

that the Commission has never had an adequate opportunity to consider the sharing and policy issues associated with the Digital Electronic Message Service ("DEMS").[3]

Teledesic Corporation, an applicant for an NGSO FSS system with downlink frequencies in the 18 GHz band,[4] hereby opposes the Joint Petition for three basic reasons. First, Associated argues as if the Commission's *28 GHz Band Plan* introduced NGSO FSS into the 18.8-19.3 GHz band for the very first time, but in fact NGSO FSS was permitted in these frequencies before, during, and after the 28 GHz Rulemaking. The effect of the *28 GHz Band Plan* was not to *add* an allocation for *non-geostationary* FSS in the designated sub-band, but rather to *remove* an allocation for *geostationary* FSS. The frequency conflict between NGSO FSS and DEMS thus has nothing to do with the *28 GHz Band Plan*, and provides no reason for reconsideration.

Second, the sharing issue on which Associated suggests reconsideration is one that Associated deliberately prevented the Commission from considering during the 28 GHz Rulemaking. For almost four years now, the Commission and several dozen private parties have been struggling to accommodate all the proposed uses of the frequencies in the Ka-band,[5] including the frequencies in which Associated would like to implement DEMS systems. Rather than participate constructively in this docket, however, Associated chose to remain silent — even while it aggressively collected licenses for the hitherto-defunct DEMS service. *This strategy of stealth was so successful that on at least one occasion the Microwave Branch of the Wireless*

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3 Joint Petition for Limited Reconsideration ("Joint Petition"), CC Docket No. 92-297 (filed Sept. 27, 1996).

4 Application of Teledesic Corporation for Authority to Construct, Launch, and Operate a Low Earth Orbit Satellite System in the Domestic and International Fixed Satellite Service, File Nos. 22-DSS-PL/A-94, 43-SAT-AMEND-95, and 127-SAT-AMEND-95 (filed March 21, 1994).

5 The term "Ka-band" generally refers to frequencies from 17.7-20.2 GHz (downlink) and 27.5-30.0 GHz (uplink).

Bureau licensed two DEMS applicants for the same frequencies in the same geographic area, and neither the licensees nor the Bureau even noticed. Thus, Teledesic and the other parties who participated in this proceeding saw their business plans delayed pending adoption of a band plan, while Associated was able, because of its silence, to accumulate DEMS licenses through random licensing activity, without the inconvenience of any policy review by the Commission of this new point-to-multipoint service. Every one of Associated's licenses was granted during the 2 1/2 years *after* Teledesic filed its application, while Teledesic and others were working with the Commission on the 28 GHz Rulemaking. Now, apparently unhappy with the result of the proceeding it deliberately avoided, Associated insists that everyone else's business plan be *further* delayed so that it can finally offer its thoughts on frequency use in the Ka-band. The Commission should not reward such questionable regulatory tactics.

Third, the Commission has been aware of frequency conflict between DEMS and NGSO FSS for several months (no thanks to Associated), and has already announced its intention to conduct a comprehensive rulemaking about the future of DEMS in the 18 GHz band, including the sharing issue raised here by Associated.[6] The public interest would be best served by addressing Associated's Joint Petition in the upcoming 18 GHz Rulemaking, not by reopening the 28 GHz Rulemaking and further delaying service to the public from parties who, unlike Associated, have already been participating responsibly in this docket for up to four years. Consideration of Associated's DEMS issues in an 18 GHz Rulemaking would afford the Commission an opportunity to make important policy determinations on other DEMS issues, such as whether a DEMS allocation is still appropriate in light of its history of commercial failure and

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[6] Freeze on the Filing of Applications for New Licenses, Amendments and Modifications in the 18.8-19.3 GHz Band, DA 96-1481 (August 30, 1996) (the *"Freeze Order"*).

in light of more recent allocations for other similar point-to-multipoint services. If the Commission concludes that DEMS should now be resuscitated in spits of its fifteen-year history of commercial failure, an 18 GHz Rulemaking would also permit the Commission to identify suitable spectrum for the service — spectrum that would give DEMS another chance at commercial viability without disrupting a band plan that the Commission has already negotiated, proposed, and adopted domestically, and has persuaded the rest of the world to support. Thus, while the Joint Petition to reopen the 28 GHz Rulemaking should be quickly denied, the sharing issues identified by Associated should be considered by the Commission in an 18 GHz Rulemaking as soon as practicable.

BACKGROUND

In March 1994, Teledesic applied for authority to construct, launch, and operate a constellation of non-geostationary satellites in order to provide broadband fixed satellite service in the Ka-band. The Commission placed the Teledesic application on public notice on July 28, 1995, with comments or petitions to deny due by September 29, 1995.[7] No one petitioned to deny the application, no comments in opposition were submitted, and no competing applications were filed. Moreover, the application was widely supported.[8]

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[7] Public Notice, DA 95-1689 (July 28, 1995).

[8] Letters of support were submitted by U.S. Sens. Pete V. Domenici, Byron Dorgan, Slade Gorton, Mark O. Hatfield, Frank H. Murkowski, and Patty Murray; U.S. Reps. Richard Burr, Michael D. Crapo, Norman Dicks, Jennifer Dunn, Doc Hastings, Jim McDermott, Jack Metcalf, George Nethercutt, Michael G. Oxley, Bill Richardson, Dan Schaefer, Linda Smith, Randy Tate, Rick White, and Don Young; and from the following: AIL Systems, Inc.; AlliedSignal Aerospace, Altair Aerospace Corporation; Arianespace, Inc.; BBIV Systems & Technologies; Boeing Commercial Space Company; Colorado Space Grant Consortium; Daedalian Technologies, Ltd.; Deskin Research Group; EMS Technologies; Honeywell Space Systems; Integral Systems; Intermetrics, Iris Consortium; ITT Defense & Electronics; L'Garde; Inc.; New Mexico Office of Space Commercialization; NASA, Nichols Research Corporation; Ohio University School of Telecommunications; Olin Aerospace Division; Schaeffer Magnetics, Inc., Spaceport Systems

For more than three years — even before it filed its own application — Teledesic participated in the activity leading to the establishment of the "LMDS/FSS 28 GHz Negotiated Rulemaking Committee" ("NRMC") chartered by the FCC to develop rules that would permit sharing among the satellite and terrestrial services interested in the 28 GHz band and its paired downlink spectrum at 18 GHz. The primary conclusion of the NRMC was that the Local Multipoint Distribution Service ("LMDS") — which, like the version of DEMS proposed by Associated, is a point-to-multipoint terrestrial service intended for ubiquitous user terminals — could not share spectrum with FSS earth station receivers.[9] Ultimately, after one of the more publicized and exhaustive spectrum allocation disputes in memory, the Commission relied on this conclusion to adopt a band segmentation plan so that both satellite and terrestrial services would have an opportunity to compete in the marketplace and realize their full potential, free of harmful interference.[10] The Commission also included this band segmentation plan in its proposals for the 1995 World Radiocommunication Conference, at which the U.S. successfully persuaded the rest of the world to embrace the U.S. band plan, including the identification of the 18.8-19.3 GHz frequencies for NGSO FSS downlinks.

Meanwhile, as Teledesic and over forty other parties were working on the NRMC, the 28 GHz Rulemaking, and WRC-95, Associated was quietly collecting DEMS licenses in the 18 GHz band. The Commission had first allocated spectrum to DEMS in 1981, recognizing even then that the "point-to-multi-point, omnidirectional nature of the transmissions from the [DEMS nodal stations] is not conducive to spectrum sharing with other services including fixed point-to-point,

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International; Spectrum Astro, Inc.; Technica, Inc.; Texas Instruments, Inc.; Universities Space Research Association; and Western Commercial Space Center.

9 REPORT OF THE LMDS/FSS 28 GHz RULEMAKING COMMITTEE 85 (1994).

10 *See generally 28 GHz Band Plan.*

mobile, and other radio services."[11] At the time Teledesic filed its NGSO FSS application (and indeed, throughout the 28 GHz Rulemaking), DEMS was a defunct service: it had an allocation on paper, *but not a single operational system in the real world.* Even Associated, which has been applying for DEMS licenses in the name of various affiliates since the mid-1980s (and often letting them lapse after certifying completion of construction), stated as recently as July 23, 1996 -- the day after the release of the *28 GHz Band Plan* -- that "no wide area 18 GHz networks are in operation."[12] Because DEMS was defunct, with no operational systems after fifteen years on the books, it posed no coordination problem with any other service. Neither the Commission nor the private participants in the 28 GHz Rulemaking ever considered the feasibility of coordination between DEMS and any other service because DEMS did not exist in the real world. Only Associated knew of its plans to resuscitate the service, but despite almost daily stories in the trade press about the twists and turns of the 28 GHz Rulemaking, Associated never once commented on the Commission's proposal to locate NGSO FSS downlinks in the same frequencies as the defunct DEMS service. In fact, Associated never articulated its plans at a policy level in the Commission.

Associated's strategy of stealth ended the day after the Commission released its *28 GHz Band Plan*, when Associated filed 174 new applications for DEMS licenses. This filing, following on the heels of another 44 filed the previous month, finally drew attention to the orchestrated accumulation of DEMS licenses by Associated, and unambiguously raised questions about

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11 Amendment of Parts 2, 21, 87, and 90 of the Commission's Rules to Allocate Spectrum for, and to Establish Other Rules and Policies Pertaining to, the Use of Radio in Digital Termination Systems for the Provision of Digital Communications Services, 86 F.C.C.2d 360, 362 (1981) ("*First DEMS Report and Order*").

12 *See, e.g.,* Application of Microwave Services, Inc., File No. 9607650, FCC Form 494, Exhibit M, at 3 (July 23, 1996).

whether NGSO FSS earth stations could be protected from harmful interference in the 18 GHz band. Believing that the Commission had never intended for yet another point-to-multipoint, LMDS-like microwave service to operate in the middle of the frequencies the United States had just persuaded the rest of the world to identify for NGSO FSS downlinks, Teledesic sought a freeze on DEMS licensing to preserve the *status quo* while sharing possibilities were once again investigated.

On August 30, 1996, the Commission froze acceptance of new DEMS applications, as well as the processing of some pending DEMS applications.[13] The Commission did not, however, freeze the processing of the 174 most recent Associated applications, and so, on September 6, 1996, Teledesic petitioned to deny them. Teledesic noted among other things that the pending applications, like others previously filed by Associated, requested multiple channel pairs in violation of Commission rules. Teledesic also asked the Commission to determine the status of some twenty-seven other DEMS licenses held by Associated, in light of the fact that Associated had constructed only single point-to-point links in these markets which, by definition, did not constitute the point-to-multipoint DEMS systems Associated was required to construct. In addition, Teledesic called the Commission's attention to public statements from Associated to the effect that their systems were not yet "operational," as required by Commission rules.

Even while it was seeking the freeze, Teledesic also sought further information from Associated about its technical parameters so that the possibility of sharing with Teledesic's proposed earth stations could be explored. The response from Associated left Teledesic without adequate information for a definitive technical analysis. Nonetheless, in the interest of advancing

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[13] *Freeze Order, supra* note 6. The Commission also froze applications for NGSO FSS earth stations at 18.8-19.3 GHz.

coordination discussions, and at the request of Commission staff, Teledesic made some reasonable assumptions about the missing DEMS parameters and prepared an informal and preliminary sharing analysis indicating that DEMS transmitters would cause unacceptable interference to FSS earth stations in the 18.8-19.3 GHz band, making ubiquitous deployment of such earth stations impossible. Despite Teledesic's *caveat* that "[t]his preliminary analysis is not intended to prejudice the outcome of sharing discussions, but rather to expedite consideration of the sharing and interference issues,"[14] Associated used this good-faith contribution to the sharing discussion as a pretext for various retaliatory attacks on Teledesic's license application, including the petition at issue here.[15]

ARGUMENT

I. The Commission's *28 GHz Band Plan* Did Not Add an Allocation for NGSO FSS; It Removed an Allocation for GSO FSS.

In the *28 GHz Band Plan*, the Commission designated 500 MHz of the 28 GHz band for NGSO FSS use. This was a critical step toward the availability of interactive, broadband satellite services not only in the United States but around the world, particularly in rural and remote areas

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14 Letter from Scott Blake Harris to Michele Farquhar and Don Gips (September 3, 1996), at 3 (attaching "Teledesic Analyses Have Consistently Demonstrated that Sharing Between FSS and Point-Multipoint Systems is Not Feasible").

15 *See also* Motion to Treat Interference Study as Major Amendment, to Assign a New File Number, and to Hold Teledesic's Applications in Abeyance in the Interim, File Nos. 22-DSS-P/LA-94, 43-SAT-AMEND-95, and 127-SAT-AMEND-95 (filed Sept. 16, 1996) (claiming, without supporting legal authority, that the informal interference analysis somehow amended Teledesic's pending application); Joint Petition for Reconsideration, DA 96-1481 (filed Sept. 30, 1996) (arguing that the potential for unacceptable interference from DEMS transmitters into FSS *earth stations* should lead the Commission to freeze licensing of NGSO FSS *space station* applications).

that would not get broadband service any other way.[16] However, notwithstanding the importance of this action for providers of fixed satellite service, it had virtually no effect on Associated or any other DEMS licensee or applicant because it dealt with the relative priority of GSO and NGSO systems with respect to each other, not with respect to DEMS or any other terrestrial service.

Associated argues as if the *28 GHz Band Plan* somehow created new sharing difficulties for DEMS by introducing NGSO FSS into a band where it had not previously been permitted. This represents a fundamental mischaracterization of the *28 GHz Band Plan.* Even before the *28 GHz Band Plan,* the frequencies between 18.8 and 19.3 GHz were allocated on a primary basis to the Fixed Satellite Service (without any distinction between geostationary and non-geostationary satellites), and had been for almost twenty-five years.[17] However, prior to 1995, the International Radio Regulations treated GSO satellites as the norm, and required NGSO satellites to yield to GSO operations.[18] The point of the *28 GHz Band Plan* was to designate 500 MHz — 18.8-19.3 GHz — in which GSO FSS downlinks would be secondary to NGSO operations. At the 1995 World Radiocommunication Conference, the U.S. Government persuaded the rest of the world to identify the same 500 MHz for NGSO operations, thus paving the way for implementation of NGSO FSS systems.[19] Both domestically and internationally, then, the effect was not to add

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16 By definition, a non-geostationary satellite moves in relation to the Earth. Because of this fact, the only way for a non-geostationary system to provide continuous coverage of any one spot on Earth is by using a constellation of satellites which, together, cover the globe, including places to which it would not otherwise be economical to extend that service capability for its own sake.

17 Amendment of Part 2 of the Commission's Rules to Conform, to the Extent Practicable, with the Geneva Radio Regulations, as Revised by the Space WARC, Geneva, 1971, 39 F.C.C.2d 959 (1973). *See also* Teleprompter Corp., 12 F.C.C.2d 936, 939 (1968) (reserving 17.7-23.0, 27.525-31.3, and 38.6-40.0 GHz for future deployment of communications satellites, pending international agreement on satellite allocations).

18 International Telecommunications Union, Radio Regulation No. 2613 (Geneva 1994).

19 Resolution 118 (WRC-95), *"resolves 2," reprinted in* FINAL ACTS OF THE WORLD RADIOCOMMUNICATION CONFERENCE (WRC-95) 660, 682 (1996). WRC-95 identified 500 Mhz for NGSO FSS downlinks. Of that, 400 MHz was made available for immediate use, and the

NGSO FSS into the band, but to remove the priority of GSO FSS. Thus, whether or not DEMS can share with NGSO FSS or GSO FSS, the sharing problems on which Associated bases its Joint Petition have nothing to do with the Commission's redesignation of the 18.8-19.3 GHz band for NGSO FSS.

In short, while Associated may disagree with Teledesic's assessment of the possibility of sharing between DEMS transmitters and FSS earth stations, the sharing problems between these two services were neither created nor even affected by the *28 GHz Band Plan*. Thus, resolution of the sharing questions identified by Associated would not be facilitated by reconsideration of the NGSO FSS designation or any other aspect of the 28 GHz Rulemaking.

II. The Sharing Issue on Which Associated Suggests Reconsideration Is One That Associated Deliberately Prevented the Commission from Considering During the 28 GHz Rulemaking.

Teledesic and a host of other interested members of the public worked diligently and successfully with the Commission to address Ka-band sharing and coordination issues in the 28 GHz Rulemaking. The Commission formally called for public comment repeatedly during the nearly four years of that proceeding, and forty-six parties responded to articulate their interests in the band. Yet when the Commission proposed to use 18 GHz spectrum for NGSO FSS downlinks — at a time when there were no operational DEMS systems and only Associated knew of its plans for resuscitating the DEMS — Associated deliberately chose not to come forward to articulate its plans for the band. Instead, Associated chose to proceed by "stealth."[20] Associated emerged only in the month before the 28 GHz order, and then only in *ex parte* presentations

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other 100 MHz was frozen, with further action to be taken at WRC-97. *See also 28 GHz Band Plan*, 11 F.C.C.Rcd. at __, slip op. at ¶ 23 n.28.

20 *See Alex Mandl's End of the Rainbow*, FORTUNE, Sept. 30, 1996.

where it purported to present the Commission with a *fait accompli*. Under these circumstances, the public interest would not be well served by giving Associated a second bite at the apple.

The point here is not *simply* that Associated is inexcusably tardy, or that it would be inequitable to reopen a four-year-old rulemaking at the request of a company that deliberately chose not to participate — though both those things are true. The point here is rather that both the 28 GHz Rulemaking and Associated's conscious decision not to participate in it have had important consequences that cannot easily be undone at this point. This is most obviously true of the Rulemaking itself. The Commission, working with private participants in the 28 GHz Rulemaking, produced a band plan that was incorporated into the U.S. proposals at WRC-95. The WRC-95 effort, in turn, resulted in that Conference's decision to identify the 18.8-19.3 GHz frequencies internationally for NGSO FSS downlinks. The fact that the ITU, *at the request of the United States,* has identified the same 500 MHz for NGSO FSS downlinks that the Commission has already allocated domestically makes it most unwise to reconsider that allocation or any other aspect of the *28 GHz Band Plan.*

Apart from the 28 GHz Rulemaking itself, Associated's decision not to participate in the Rulemaking has also had important consequences. The first was to delay other users of the Ka-band while Associated quietly collected DEMS licenses. Several dynamic new industries were kept on hold for years while the Commission worked to resolve difficult spectrum management issues. Licensing was delayed not just for NGSO FSS, but also for LMDS, some of the "Big LEO" NGSO MSS systems, and a new generation of GSO FSS in the Ka-band. Meanwhile, Associated was applying for, and receiving, DEMS licenses in over thirty metropolitan areas, using the very same frequencies that were at issue in the 28 GHz Rulemaking. Every single one of Associated's applications was processed in the 2 1/2 years *after* Teledesic filed its NGSO FSS

space station license, yet because Associated never participated in the 28 GHz Rulemaking, its applications were granted while Teledesic's (and those of the other participants in the 28 GHz Rulemaking) remained on hold. Unless the Commission invalidates every one of the licenses Associated collected during the pendency of the 28 GHz Rulemaking, it is no longer possible to simply go back and do the 18 GHz part of the Rulemaking over.

The second major consequence of Associated's conscious decision not to participate in the 28 GHz Rulemaking was that the Commission never had an opportunity to make any policy determinations about the "new DEMS" service Associated was planning to assemble from the ashes of the old DEMS. Instead, Associated's applications were treated as though they were routine when in fact they were not. Some applications were granted for "blanket" buildout within a certain geographic area, despite the effect this would have on coordination obligations.[21] Some were granted for multiple channel pairs, in violation of rules the Commission adopted to combat a history of spectrum warehousing in the DEMS service.[22] And most importantly, Associated's applications were processed by the staff of the Microwave Branch of the Wireless Bureau without any apparent recognition that the Commission was at the very same time considering how the 18 GHz frequencies should be used. This resulted in essentially random licensing activity, which gave Associated a toe-hold in the 18 GHz band before the Commission had any opportunity to consider, for example, whether DEMS differed materially from the LMDS service that was the main subject of the 28 GHz Rulemaking.

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21 *E.g.*, Conditional License and License Certification for Station WHT 336, File No. 5385-CD-P/L-95 (MSI license in S.F.) (Jan. 10, 1995).

22 *See* generally Reply Brief in Support of Consolidated Petition to Deny and Petition to Determine Status of Licenses, File No. 9607682 (lead application) (filed Sept. 23, 1996).

Nothing could illustrate this chaotic policy environment better than the current state of DEMS licensing for the San Francisco SMSA. On June 2, 1993 FirstMark Communications, Inc. applied for a DEMS license in Channels 30-33. Three weeks later, the FirstMark application was put on Public Notice. Nearly six months passed before MSI (an Associated affiliate) applied for one of the very same channels in San Francisco, without even mentioning that FirstMark had already applied for this channel and that the cutoff window had already closed. The MSI application went on Public Notice on April 28, 1994 (*after* Teledesic had filed its NGSO FSS application), *apparently without FirstMark, Associated, or the Microwave Branch realizing that two conflicting DEMS applications were on file, each with its own cutoff.* Seven more months passed until January 10, 1995, when MSI's application was granted for Channel 30, *again with no mention of the conflicting applications,* and two days later FirstMark was licensed for Channels 30-33. *In other words, the Microwave Branch of the Wireless Bureau licensed two competing carriers for the same frequencies in the same geographic area, and neither the licensees nor the Bureau even noticed.*

Even more telling, perhaps, is what happened *after* the conflicting licenses were granted. On June 10, 1996 FirstMark notified the Commission that it had completed construction of its system, as it was required to do, operating a hub transmitter between 18.8725 and 18.9125 GHz on San Francisco's Sutro Tower. A month later, on July 9, 1996, MSI notified the Commission that it, too, had completed construction of its system, operating between 18.870 and 18.880 GHz from a hub transmitter that was *also located on Sutro Tower.*[23] This chain of events leaves no doubt that the current efforts to resuscitate the DEMS service began in an environment where few

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[23] Perhaps Associated can explain how both of these mutually exclusive systems can be operational.

people were watching and even those who were most directly involved — including Associated — were unable to tell what was happening. Despite what Associated may now argue, the fact is that neither the Commission, nor the parties to the 28 GHz Rulemaking, nor even the DEMS licensees themselves, knew about all the renewed DEMS licensing activity until after Associated tipped its hand by filing its applications in bulk.

Having picked up dozens of licenses as a result of this random licensing activity, Associated suggests that *now* would be a propitious time for the 28 GHz Rulemaking to turn to the DEMS sharing issue it has concealed for the last three years. This is a transparent attempt to present the Commission with a *fait accompli*, recasting the "little LMDS" that Associated is cobbling together in the DEMS spectrum as an established service even though there wasn't a single operational DEMS throughout the entire 28 GHz Rulemaking, right up to and beyond the *28 GHz Band Plan*. Again, unless the Commission were to invalidate every DEMS license granted during the four years of the 28 GHz Rulemaking, there is simply no way to unring this particular bell. Associated deliberately kept DEMS and DEMS/FSS sharing out of the record while the *28 GHz Band Plan* was being negotiated, proposed, and adopted both domestically and around the world. Giving Associated a second chance to participate, this time cloaked with the mantle of an incumbent, would be an affront to rational policymaking.

III. The Commission Should Address Associated's Concerns About Frequency Sharing in Its Upcoming 18 GHz Rulemaking.

While Teledesic strongly opposes any attempt to give even "limited reconsideration" to the *28 GHz Band Plan*, Teledesic agrees with Associated on the need for Commission-level consideration of the sharing problem created by the co-primary allocations to DEMS and NGSO FSS at 18 GHz and related policy issues. The Commission has already announced its intention to consider this problem in

the context of a comprehensive rulemaking on 18 GHz licensing in general, and Teledesic urges the Commission to adhere to this announced intention.

In the *Freeze Order*, the Wireless and International Bureaus stated that they would "soon make recommendations to the Commission on how to proceed with licensing of fixed terrestrial services in the 18 GHz band, including a review of the current licensing approach as well as the coordination issues arising from the co-primary status of fixed terrestrial services and NGSO\FSS."[24] Teledesic enthusiastically endorses the staff's view that such a rulemaking is needed. As we have noted above, licensing decisions in the recent past regarding DEMS have been made without benefit of any high-level articulation of Commission policy, even though many of the DEMS licenses currently in existence were granted in violation of applicable rules, often without these rules having been waived.

In addition, it is no longer clear exactly what the nature of DEMS is, or what public interest benefits it is supposed to yield. The "new DEMS" contemplated by Associated appears to be a broadband point-to-multipoint service that differs in important ways from the narrowband, low-power service that DEMS was originally intended to be. For example, the original DEMS was to have been provided by multiple licensees in a community using one or sometimes two 10 MHz channel pairs, while the "new DEMS" appears (from Associated's applications) to require a single company to aggregate all of the available channel pairs in each market. In fact, DEMS proponents see no difference between DEMS and extremely broadband services authorized by the Commission in the 28 GHz and 38 GHz bands, except that the "28 GHz and 38 GHz bands suffer from inferior propagation characteristics, thus necessitating the deployment of many more nodal

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[24] *Freeze Order*, *supra* note 6 ¶ 6.

sites than at 18 GHz (as many as 10 times more)."[25] Given that the frequencies allocated to DEMS have never been put to any significant commercial use, either at 10 GHz or at 18 GHz,[26] perhaps any new DEMS *should be* different from the old one, but that is a policy question that should be considered by the Commission after public notice and comment, not determined by random licensing activity.

As the *Freeze Order* suggests, the upcoming 18 GHz Rulemaking would be the most logical place to consider whether DEMS can or should co-exist with any other service at 18 GHz, including the NGSO FSS. The most obvious advantage of addressing this issue in the 18 GHz Rulemaking rather than the 28 GHz Rulemaking is that an 18 GHz Rulemaking will be focused more narrowly on the portion of the band where the sharing problems exist. It is therefore more likely to attract comment from potential users of the band who did not comment on 18 GHz issues in the 28 GHz Rulemaking. Conversely, it will not require the time and attention of all

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[25] The Associated Group, Inc., *Fact Sheet and Corporate Backgrounder* at 5 (August 19, 1996). LMDS licensees at 28 GHz will have access to as much as 1300 MHz in each market. Licensees in the 38 GHz service now have access to 100 MHz in each market, and some hold multiple authorizations permitting use of up to 400 MHz of spectrum in a single market.

[26] The original allocation for DEMS in 1981 ran from 10.55 to 10.68 GHz. Over the next 14 years, DEMS was gradually shifted from the 10 GHz band to the 18 GHz band. In 1983, the Commission allocated additional spectrum in the 18 GHz band to DEMS to accommodate expected demand for the service. *See* Amendment of Parts 2, 21, 74 and 94 of the Commission's Rules to Allocate Spectrum at 18 GHz for, and to Establish Other Rules and Policies Pertaining to, the Use of Radio in Digital Termination Systems and in Point-to-Point Microwave Radio Systems for the Provision of Digital Electronic Messages, and For Other Common Carrier, Private Radio and Broadcast Auxiliary Services; and to Establish Rules and Policies for the Private Radio Use of Digital Termination Systems at 10.6 GHz, 54 R.R.2d 1091 (1983) (*"Second DEMS Report and Order"*). Ten years later, no DEMS systems having materialized, the Commission began to transition DEMS out of the 10 GHz band altogether. *See, e.g.*, Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, 7 F.C.C. Rcd. 6100, 6103 n. 7 (1992); Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, 7 F.C.C. Rcd. 6887 (1992); Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, 8 F.C.C. Rcd. 6495 (1993); Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, 8 F.C.C. Rcd. 6589 (1993).

those who participated in the 28 GHz Rulemaking at some point in the last four years, but who have no real interest in what happens to DEMS or any other service at 18 GHz.

In addition, as the Commission well knows, the intricacies of the *28 GHz Band Plan* took years to hammer out, and it is naive to suggest that the Commission could give "limited reconsideration" to just one piece of the puzzle without materially affecting the entire compromise. Indeed, after the Commission first proposed what eventually became the *28 GHz Band Plan*, a number of participants in the 28 GHz Rulemaking tried to modify what they characterized as separate parts of the total package. Each such attempt met with resistance from other parties to the Rulemaking, and the Commission had to endure a whole year of such niggling before it concluded that the compromise proposal it had already put forth was better than any of the alternatives suggested by those who wished to "improve" the plan here or there. This history, which Teledesic suspects is still all too fresh in the minds of the Commission's staff, demonstrates that it would be much wiser to consider DEMS sharing by commencing an 18 GHz Rulemaking than by reconsidering any part of the 28 GHz Rulemaking.

Addressing the sharing issue identified by Associated in a separate 18 GHz Rulemaking would also give the Commission an opportunity to solicit comment on other policy issues raised by Associated's plans for a "new DEMS." In particular, the Commission should ask in its 18 GHz Rulemaking

1. whether the public interest still requires any DEMS allocation at all, in light of this service's history of warehousing and commercial failure, and in light of the fact that other services have recently been created by the Commission to provide extremely similar services; and

2. if so, what spectrum might be most suitable for DEMS.

DEMS, as currently touted by its proponents, is not a unique service. Proponents of the "new DEMS" wish to provide two-way, broadband, digital, point-to-multipoint service over metropolitan areas.[27] However, the Commission recently allocated large amounts of spectrum to other services for what appear to be precisely the same purposes. Most obviously, the Commission has just finished allocating 1,000 MHz to LMDS (which the new DEMS so closely resembles), and has proposed to allocate 300 MHz more.[28] LMDS will offer "services that compete both with local exchange carriers in the provision of local exchange service," as well as "two-way video, teleconferencing, telemedicine, telecommuting, data services and global networks."[29] It is difficult to distinguish between the services that LMDS permittees will provide and those that DEMS proponents claim they wish to provide. Moreover, real-life LMDS systems are up and running[30] and a large number of communications businesses have expressed interest in obtaining LMDS licenses at auction. This is in stark contrast to the history of DEMS, which after fifteen years has spawned no operational systems and only a handful of affiliated entities intent on snapping up virtually all the available spectrum before anyone else notices.

The Commission has also authorized permittees in the 38.6-40.0 GHz band to provide point-to-point or point-to-multipoint digital services, and is currently considering auctioning the 37-38.6

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27 "DEMS infrastructure serves fixed subscribers with very high bandwidth needs, on an as-needed basis. This permits the provision of dozens of voice lines, as well as multi-megabit data (including Internet access) and video conferencing, via a single radio and modem unit on the subscriber end." The Associated Group, Inc., *Fact Sheet and Corporate Backgrounder* at 5 (August 19, 1996).

28 *28 GHz Band Plan,* 11 F.C.C. Rcd. at ___, slip op. at 21, ¶ 45.

29 *Id.* at 6-7, ¶ 14.

30 *See* Hye Crest Management, Inc., 6 F.C.C. Rcd. 332 (1991) (granting application for early LMDS system that now has become operational).

GHz band for similar purposes.[31] In all, some 3,000 MHz of spectrum may be available for both point-to-point and point-to-multipoint services in the 37.0-40.0 GHz band upon conclusion of the Commission's proceeding.[32] Under these circumstances, it is questionable whether the Commission should continue to allocate scarce spectrum to DEMS if DEMS will just be one more terrestrial broadband data transmission service, in competition with similar services that the Commission soon will auction. Certainly DEMS proponents, who have so far avoided any policy-oriented consideration of their plans, should be asked to outline the additional public-interest benefits that could be expected to flow from an additional allocation of spectrum for the services they propose.

This is particularly true given the harmful interference that this type of service would cause to FSS earth station receivers at 18 GHz and the fact that NGSO FSS downlinks cannot be accommodated at any other point in the spectrum other than 18.8-19.3 GHz under current international allocations. Indeed, even if the record of the 18 GHz Rulemaking should support a continued allocation for DEMS, there are almost certainly other bands where the new DEMS could be accommodated with less disruption. Unfortunately, the point-to-multipoint nature of DEMS makes it

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31 *See* Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, 11 F.C.C. Rcd. 4930, 4934 (1995) (TIA finding that "a new group of local microwave common carriers is evolving to provide 'last mile' services to broadband PCS operators and to private companies that might need high-speed broad bandwidth links between offices"); *see also id.* at 4935 (seeking comment on point-to-multipoint applications for 37 and 39 GHz bands).

32 Some of this spectrum may, however, be allocated to an NGSO FSS system proposed by Motorola, Inc. *See* Application of Motorola Satellite Systems, Inc. for Authority to Construct, Launch and Operate the M-Star System, Sept. 4, 1996. Interestingly, microwave operators in this band have analyzed the inter-service sharing possibilities in a way that is consistent with Teledesic's view of sharing at 18 GHz. *See, e.g.*, Advanced Radio Telecom, "The Motorola M-Star System: An Analysis of the Potential for Sharing With the Terrestrial 38 GHz Fixed Service," October 17, 1996 (*ex parte* presentation to the Wireless Bureau). In addition, a group of terrestrial wireless interests recently stated in a WRC-97 preparatory document that "band sharing between fixed service and fixed satellite service systems by coordination becomes largely ineffective for practical purposes in most frequency bands above 17 GHz." USWP 9B/3 Rev.1.

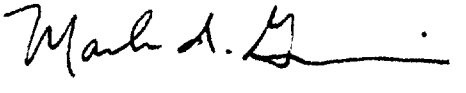
impossible for DEMS to share with any other service, whether terrestrial or satellite-based, and the ubiquitous deployment contemplated by current DEMS proponents will preclude coordination with these other services — a fact the Commission has recognized ever since it first allocated spectrum to DEMS.[33] However, as the Commission is aware, a number of interested parties have suggested that DEMS could be accommodated in other bands without any interference to existing users. So far, all of these suggestions have been made without benefit of public notice and comment; an 18 GHz Rulemaking could be expected to lead to additional suggestions.

CONCLUSION

Associated is correct to call for Commission consideration of the sharing difficulties that would be caused by a large-scale DEMS deployment at 18 GHz, but wrong to suggest that the Commission should consider this issue by reopening the 28 GHz Rulemaking. Instead, the Commission should adhere to its expressed intention to consider 18 GHz sharing issues in the context of a comprehensive 18 GHz Rulemaking.

Respectfully submitted,

TELEDESIC CORPORATION



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[33] *First DEMS Report and Order,* 86 F.C.C.2d at 362.

CERTIFICATE OF SERVICE

I, Mark A. Grannis, do hereby certify that a copy of the foregoing **Opposition to Joint Petition for Limited Reconsideration** has been sent via first class mail, postage prepaid, on this 2nd day of December, 1996 to the following:

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